

**What is claimed is:**

1. A light conductor coupling, especially for the transmission of optical signals between vehicles coupled with one another, with first and second coupling parts, which are couplable with one another and in each of which is held a light conducting element, of which at least one is elastically biased so that the light conducting elements are pressed against one another with their end surfaces, when the coupling parts are coupled with one another, in order to allow the transmission of light from one light conducting element to the other light conducting element, wherein the end surface of one light conducting element is spherically concave and the end surface of the other light conducting element is formed spherically convex with the same radius of curvature.
2. A light conductor coupling according to claim 1, wherein the light conducting elements are each made of a light opaque sleeve and a transparent core received in the sleeve.
3. A light conductor coupling according to claim 2, wherein the wall thicknesses of the sleeves in the region of the end of surfaces each have a value which is at least  $1/10$ , preferably at least  $1/5$ , of the radius of curvature of the end surfaces.
4. A light conductor coupling according to claim 1, wherein the first coupling part includes a sending device which creates the optical signals from electric signals and feeds the optical signals into the light conducting element of the first coupling part.
5. A light conductor coupling according to claim 4, wherein the sending device has at least one LED for the creation of the optical signals.

6. A light conductor coupling according to claim 4, wherein the first coupling part includes a microprocessor which prepares the electric signals for the sending device.
7. A light conductor coupling according to claim 1, wherein the second coupling part includes a receiving device which creates electric signals from the optical signals transmitted to the light conducting element of the second coupling part.
8. A light conductor coupling according to claim 7, wherein the receiving device has a photodiode for the detection of the optical signals.
9. A light conductor coupling according to claim 7, wherein the second coupling part includes a microprocessor which processes the electric signals created in the receiving device.
10. A light conductor coupling according to claim 6, wherein the microprocessor of the first coupling part is programmed to merge several individual signals into electrically multiplexed signals, and the microprocessor of the second coupling part is programmed to separate the electric multiplexed signals into individual signals.
11. A light conductor coupling according to claim 4, wherein the first and/or second coupling part has a housing on one axial end of which a sleeve-like section is formed in which the light conducting element is axially slidably supported and is biased in the direction of that one axial end, and on the other end of which a connecting pin is formed and is designed for insertion into a contact carrier.
12. A light conductor coupling according to claim 11, wherein the connecting pin has two sections insulated from one another, of which sections one is connected with ground potential and the other is connected with an electric signal conductor when the connecting pin is inserted into the contact carrier.